

# Quality of life in healthy children and in children with tension headaches – a comparative analysis

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## Abstract

**Purpose:** The aim of this study was the assessment of the quality of life of children and adolescents with tension headaches in comparison with healthy peers.

**Material and methods:** The study was conducted on 135 middle school and high school students in Poznań and on 86 children with tension headaches, that were treated in the out-patient clinic of The Chair and Clinic of Development Age Neurology of Karol Marcinkowski University of Medical Sciences in Poznań. The research tool for both groups was Pediatric Quality of Life Inventory, version 4.0 (PedsQL 4.0) questionnaire.

**Results:** In the analysed groups dominated 14- and 16-year-old children. Among children with tension headaches, the ailments usually appeared once or twice a week in 39 (45%) of them. With the use of the PedsQL 4.0 questionnaire the following fields of activity were analyzed: biological, emotional, social functioning and mood.

**Conclusions:** The biggest discrepancies between the group of healthy children and those with headaches were noted in the field of emotional functioning and mood. Adolescents with tension headaches more frequently reported the feeling of fear and sleep disorders in comparison to healthy students. Children with headaches look at the future in a more pessimistic way and are less satisfied with their lives.

**Key words:** quality of life, headaches, children.

## Introduction

Headache is a common problem in developmental age. It exists in 30 to 50% of children as young as seven years of age, the number growing to 90% in teenagers [1-4]. Bothersome and long-lasting headache usually has a negative impact on child's bio-psycho-social condition, making the child more sensitive and withdrawing in contact with peers. The appearing limitations in children's functioning lower their subjective judgment of the quality of life.

The aim of this study was the assessment of the quality of life of children and adolescents with tension headaches in comparison with healthy peers.

## Material and methods

The study was conducted on 135 middle school and high school students in Poznań and on 86 children with tension headaches that were treated in the out-patient clinic of The Chair and Clinic of Development Age Neurology of Karol Marcinkowski University of Medical Sciences in Poznań. The headaches' classification was done on the basis of diagnostic criteria established in 1988 by The International Headache Society with the modification for the developmental age. The research tool for both groups was PedsQL 4.0 questionnaire [2].

The U-test was used for comparison of respective fractions (%) of examined features in healthy children and in children with headaches.

## Results

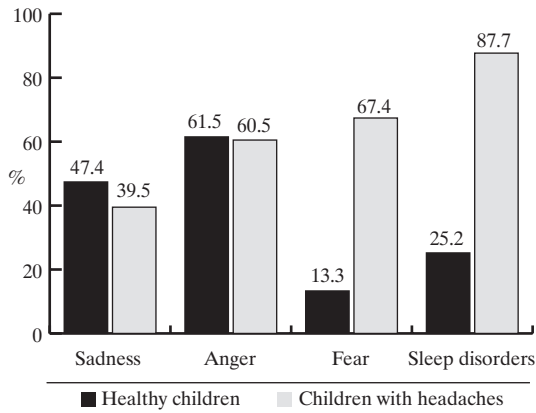
In the healthy children group the girls to boys ratio was 1.3:1. 14- and 16-year-old children prevailed. Among the children with tension headaches the girls to boys ratio was 1.5:1. Children at the age of 14 (16%), 16 (16%) and 18 (14%) dominated.

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**Figure 1.** Emotional functioning of healthy children and adolescents and of children and adolescents with headaches



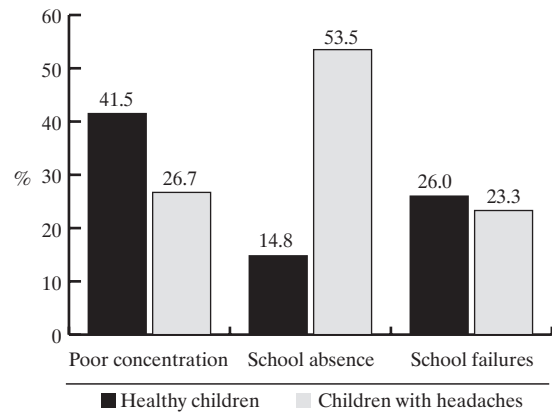
U-test for factions: Sadness NS, Anger NS, Fear  $p < 0.001$ , Sleep disorders  $p < 0.001$

With the help of PedsQL 4.0 questionnaire four areas were analyzed: biological, emotional and social functioning, and mood. In the field of “biological functioning” healthy children presented a lot of independence and mobility. Minor difficulties were indicated when lifting something heavy – 23 children (17.0%) or running – 17 children (12.6%), 30 children (22.2%) of them experienced feeling of drowsiness. In the group of children with headaches the ailments appeared 1-3 times a day in 12 (13.9%) of children, 1-2 a week in 39 (45.3%), once a month in 9 (10.5%), and episodic problems appeared in 6 (7.0%) of the group. The adolescents described the headache above all as a sensation of tightening of a hoop around the head. 34 (39.5%) children in the group described the intensity of pain as varying. Daily feeling of pain caused in 11 (12.8%) of the group difficulties in running, and 6 (7.0%) were not able to fulfill their house chores.

Among the emotions analyzed in the area of emotional functioning (Fig. 1) among healthy children the feeling of anger appeared most frequently (in 83 children – 61.5%). The feeling of sadness accompanied 64 (47.4%) students, and fear 14 (13.3%) of them. In the group of children with headaches the feeling of sadness appeared in 34 (39.5%) of them, which is less frequently than in their peers, the feeling of anger appeared to almost the same extent (in 52 children – 60.5%), but they experienced the feeling of fear (58 children – 67.4%) and sleep disorders (75 children – 87.2%) more often, the latter teenagers described as not being able to fall asleep, waking up at night or having nightmares. The differences in the frequency of experiencing fear between healthy children and children with headaches were proven ( $p < 0.001$ ).

In the social area contacts with peers and school functioning were analyzed. Children from both groups showed no significant difficulty in contacts with peers. Problems with learning were confirmed by 35 (25.9%) healthy students (Fig. 2), including: sometimes 27 (20.0%), often 6 (4.4%), as for the students with headaches 10 (11.6%) children signaled that they sometimes

**Figure 2.** Functioning of children and adolescents in school environment



U-test for factions:  
 Poor concentration  $p < 0.05$   
 School absence  $p < 0.001$   
 School failures  $p < 0.01$

have difficulties in learning, and 11 (12.8%) experience them often.

Difficulty with concentration during classes was signaled by 56 healthy students (41.5%), and by 23 (26.7%) students with headaches. In the statistical analysis with the U-test the differences in functioning of healthy children and children with headaches in the area of concentration ( $p < 0.05$ ) and failures ( $p < 0.01$ ) were shown.

In the field of mood the feelings connected to functioning in the family and the future, among others, were analyzed. The feeling of happiness accompanied 96 (71.1%) of healthy students and 51 (59.3%) of those with headaches. Satisfaction with one’s own life was confirmed by 97 (71.8%) of healthy students and by 48 (55.8%) of students with headaches. The support of family was confirmed by 116 (85.9%) of healthy children and by 74 (86.0%) of children with headaches. Doubts concerning their future were expressed by 21 (15.5%) of healthy students and by 25 (29.1%) of those with headaches, however 57 (42.2%) of healthy children and 27 (31.4%) of children with headaches were convinced that only good things would happen to them. A significant difference in the feeling of satisfaction of one’s life between healthy children and those with headaches was shown ( $p < 0.05$ ).

## Discussion

Headaches occur in about 60-70% children younger than 15 years of age, they are more often signaled by girls and in the age group of 15-18-year-olds [1,2,3,4,5,6].

Similarly to the studies conducted by Zgorzalewicz and Budzińska [6] among teenagers with tension headaches the ailments most frequently appeared 1-2 a week. The analysis of the area of biological functioning showed a similar range of motion activities. Only in the group of children with daily headaches

did they show a significant limitation of activities, going as far as giving up their house chores. Additional problem signalized by this group and observed also by other authors was the co-existence of somatic disorders such as stomach ache, back and neck pain [7,8]. In the emotional sphere the adolescents with headaches more often felt fear and signalizes sleep disorders. In the studies conducted by Carlsson and Larsson [7] children with tension headaches woke up sleepy and thus showed less energy. Zgorzalewicz and Budzińska [6] stated sleep disorders in 97.7% of the children, and in 33.7% of children – fear of school or teacher. Children with headaches are perceived as ambitious and diligent students. This can be confirmed by the fact that both in my own studies and in Kaynak et al. [8], and Zgorzalewicz and Budzińska [6] only 1/5 of the studied group signalized difficulties in learning. The frequency of headaches has a big impact on child's school functioning. Bothering and long-lasting headache has a negative influence on the child, reduces the ability to memorize and concentrate which leads to obtaining lower grades [9]. Powers et al. [2] noted additionally that the feeling of satisfaction from school achievements in teenagers diminishes with age.

The biggest discrepancies with the group of healthy children were affirmed apart from the emotional functioning also in the area of mood. In the conducted studies healthy children were more often accompanied by the feeling of happiness and they looked at their future in a more optimistic way. Zgorzalewicz and Budzińska [6] emphasize that 55.8% of teenagers are only satisfied with their own lives and 46.5% feel lonely.

## Conclusions

1. The biggest discrepancies between a group of healthy children and those with headaches were stated in the field of emotional functioning and mood.
2. Adolescents with tension headaches more frequently reported the feeling of fear and sleep disorders in comparison to healthy students.
3. In the examined group children with headaches looked the future in a more pessimistic way and were less satisfied with their lives.

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